

REMARKS

Reconsideration of the application in view of the above amendments and the following remarks is respectfully requested.

I. Status of the Claims

Claims 1, 3-7, 16-21, 24-31, 58-65, 68, 69, 73-75, 118, 120, 121 and 124-164 are pending in this application. In the Office Action mailed on April 2, 2007, claims 1, 3-7, 16-21, 24-31, 58-65, 68, 69, 73-75, 118, 120, 121, 124-135 and 137-164 were rejected and claim 136 was objected to as being dependent on a rejected base claim.

Claims 1, 3-7, 16-21, 24-31, 58-65, 68, 69, 73-75, 118, 120, 121 and 124-164 remain under prosecution.

II. Rejections Under 35 U.S.C. § 112

The Examiner rejected claims 144-150 under 35 U.S.C. § 112 as being indefinite as being dependent upon a cancelled claim. Applicant has amended the claims to remedy this indefiniteness.

III. Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 1, 3-7, 21, 24, 25, 58-64, 68, 69, 73, 74, 121, 124, 129, 139, 140, 141, 142, 143, 149 and 151 under 35 U.S.C. § 103(a) as being obvious over Siebert, United States Patent No. 4,858,556 in view of Moslehi, United States Patent No. 6,051,113 and Mahler, United States Patent No. 4,595,483.

The Examiner rejected claims 16 and 65 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi and Mahler and further in view of Ameen, et al., United States Patent No. 6,143,128.

The Examiner rejected claims 17-20 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi, Mahler and Ameen, and further in view of Chang, et al., United States Patent No. 6,434,814.

The Examiner rejected claims 26-29, 75, 147, 148 and 150 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi and Mahler and further in view of Mitro, et al., United States Patent No. 5,922,179.

The Examiner rejected claim 30 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi and Mahler and further in view of Kobayashi, et al., United States Patent No. 5,340,460.

The Examiner rejected claim 31 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi and Mahler and further in view of Holland, United States Patent No. 5,311,725.

The Examiner rejected claim 118 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi and Mahler and further in view of Nomura, et al., United States Patent No. 6,641,703.

The Examiner rejected claims 120 and 125-128 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi and Mahler and further in view of Chang, et al., United States Patent No. 6,434,814.

The Examiner rejected claims 130-135 and 137 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi and Mahler and further in view of Hurwitt, United States Patent No. 3,756,939.

The Examiner rejected claims 144-146 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi and Mahler and further in view of Baldwin, et al., United States Patent No. 6,419,802.

The Examiner rejected claims 158-160 under 35 U.S.C. § 103(a) as being obvious over Moslehi in view of Mitro and Baldwin.

The Examiner rejected claims 161-164 under 35 U.S.C. § 103(a) as being obvious over Moslehi in view of Mitro and Baldwin.

The Examiner has applied a simplistic approach to the evaluation of obviousness in the instant matter that is contrary to the current state of the law in this area. The Examiner has identified each element of the claim and has merely located a reference to that or a similar function in a variety of prior art references. Furthermore, the Examiner has engaged in impermissible hindsight reconstruction of the claimed invention to identify and locate these disparate elements of the prior art. Applicant concedes that if the claim merely substitutes one element for another known in the field, the combination must do more than yield a predictable result. *United States v. Adams*, 383 U.S. 39, 40 (1966). *Anderson's-Black Rock, inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969) further elaborates, stating that two elements must do more than they would in separate, sequential operation. *Id.* at 60-62. The question is whether the improvement is more than the predictable use of prior art elements. *KSR International co. v. Teleflex Inc. et al.*, 550 U.S. ____ (2007), *slip op.* at 13. *KSR* elaborates, however, stating that a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *Id.*, *slip op.* at 14. The Court cautions that a factfinder should be aware of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning. *Id.*, *slip op.* at 17. Furthermore, the United States

Court of Appeals for the Federal Circuit has stated that it is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position. *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 448 (Fed.Cir. 1986).

The Examiner cites Siebert as the primary reference with respect to claims 1, 3-7, 16-21, 24-31, 58-65, 68, 69, 73-75, 118, 120, 121, 124-135 and 137-157, as teaching a means for removal, means for coating and the use of other sources within the vacuum chamber. There is no teaching of a plasma generator for plasma cleaning, coating with conductive material or plasma etching, as required by the claims. The Examiner primarily relies on a statement made by Siebert at col. 12, lines 24-32, which states, in summary, that other types sources may be utilized in the device. No further elaboration in Siebert is made as to any criteria which would permit one skilled in the art to determine what appropriate or workable sources might be introduced. A laundry list of examples is merely provided. *Id.* The Moslehi reference is cited to teach a plasma generator for plasma cleaning and coating with conductive material. Mahler is cited for coating and plasma etching.

The Siebert reference is directed to a device for physical vapor deposition for processing thin films on substrates. The problem faced by the inventor incorporated the processing of uniform, homogeneous thin films at a commercially acceptable throughput rate. Most importantly, the device addresses the inherently non-uniform deposition characteristics of sputtering devices. The addition of other sources to this primary functionality is merely an adjunct capability, and is described in extremely terse language, lacking any significant disclosure. As stated in *Bausch & Lomb*, a single line in a prior art reference should not be taken out of context and relied upon with the benefit of hindsight to show obviousness. 796 F.2d at

448. In this case, this single line of the Siebert reference provides the sole basis for joining the teachings of the two other secondary references. Moreover, the two secondary references are not necessarily as adaptable to be combined with the Siebert reference as presented by the Examiner. While the Moslehi reference is also directed to the use of physical vapor deposition, the problem addressed by the inventor was the indexing and location of the substrate material. Once again, the Examiner relies on a single throwaway line from the reference to support his position. In addressing the function of a stepper motor in rotating the substrate in an indexed position, the reference identifies that the substrate may be located under a sputtering target or another process energy source such as an inductively coupled plasma or cleaning source. Col. 10, lines 27-28. There is no further teaching or suggestion of how or under what conditions such a source may be employed or effectively utilized. Mahler is merely directed to a sputtering device which has additional etching capabilities.

The claimed invention is directed to a device for the preparation of specimens for electron microscopy. This field is significantly different from that of substrate preparation for chip manufacture or hard disk platter coating. The primary focus of the claim is to provide not only the capability of adding or subtracting materials from the specimen, but to also provide the cleaning functionality which allows the other surface manipulation steps to be effectively achieved as well as for the specimen to be accurately visualized in the microscope after processing. The location of these features within a single vacuum chamber is a long felt, but unfulfilled need in the art, as these functions have traditionally been performed in separate devices and transferred therebetween in ambient air conditions, leading to contamination. Thus the device does not merely form the sum of its functional parts, but permits the processing functions to perform more effectively than they would in separate embodiments. In accordance

with the *Anderson's-Black Rock* Court, this is the harbinger of non-obviousness. 396 U.S. at 60-62.

As previously stated in prior responses, it is clear from the tortured and piecemeal application of these various references, in certain cases **four** references for a single rejection, that the Examiner continues to engage in inappropriate hindsight reconstruction.

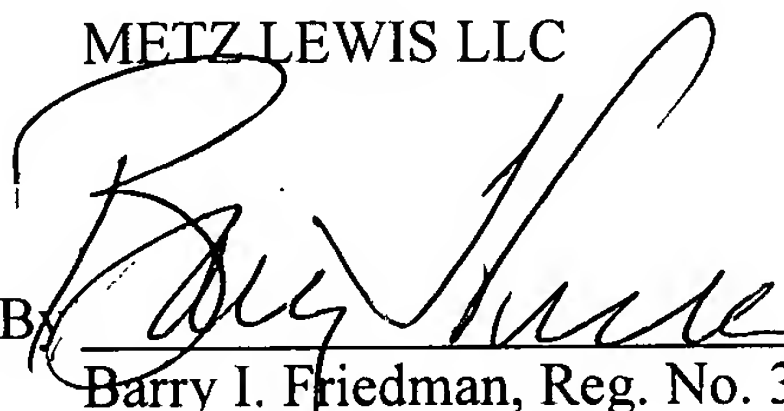
With respect to claims 158-164, the Examiner has rejected claims 158-160 as anticipated by Moslehi and 161-164 as obvious over Mitro in view of Baldwin. With respect to claim 158, the Examiner states that the sample stage of Moslehi may be located at any point in three dimensions within the chamber. Applicants' claim requires that the stage must not only be movable to any three dimensional point, but measured at an angle relative to a beam impinging on the surface of the specimen. Moslehi's stage moves only up and down and in a circular manner and is not capable of tilting relative to the incident beam. Baldwin teaches the use of a laser beam to determine thickness of the substrate surface. Col. 4, lines 27-31. There is no teaching or suggestion of the use of the laser beam to determine **location** or **orientation** as opposed to thickness. Claims 159-160 and 162-164 are dependent upon claims 158 and 161 and contain the same limitations.

CONCLUSION

Based on the foregoing remarks, Applicants respectfully submit that claims 1, 3-7, 16-21, 24-31, 58-65, 68, 69, 73-75, 118, 120, 121 and 124-164 are in condition for allowance.

Respectfully submitted,

METZ LEWIS LLC

By 

Barry I. Friedman, Reg. No. 33,695
11 Stanwix Street, 18th Floor
Pittsburgh, Pennsylvania 15222

Attorneys for Applicants

(412) 918-1100